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RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/894,018

DATE: 12/20/2001
 TIME: 12:50:17

Input Set : D:\39963-20033.txt
 Output Set: N:\CRF3\12202001\I894018.raw

P.S

ENTERED

3 <110> APPLICANT: EPIMMUNE, Inc.
 4 Sette, Alessandro
 5 Chestnut, Robert
 6 Livingston, Brian
 7 Baker, Denisw
 8 Newman, Mark
 9 Brown, David
 11 <120> TITLE OF INVENTION: METHODS AND SYSTEM FOR OPTIMIZING
 12 MINIGENES AND PEPTIDES THEREBY
 15 <130> FILE REFERENCE: 39963-20033.00
 17 <140> CURRENT APPLICATION NUMBER: US 09/894,018
 18 <141> CURRENT FILING DATE: 2001-06-27
 20 <150> PRIOR APPLICATION NUMBER: PCT/US00/35568
 21 <151> PRIOR FILING DATE: 2000-12-28
 23 <150> PRIOR APPLICATION NUMBER: US 60/173,390
 24 <151> PRIOR FILING DATE: 1999-12-28
 26 <150> PRIOR APPLICATION NUMBER: US 60/284,221
 27 <151> PRIOR FILING DATE: 2001-04-16
 29 <160> NUMBER OF SEQ ID NOS: 368
 31 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 33 <210> SEQ ID NO: 1
 34 <211> LENGTH: 22
 35 <212> TYPE: PRT
 36 <213> ORGANISM: Artificial Sequence
 38 <220> FEATURE:
 39 <223> OTHER INFORMATION: Oligonucleotide for minigene HBV.1 with epitope
 40 identity core 18
 42 <400> SEQUENCE: 1
 43 Thr Leu Lys Ala Ala Phe Leu Pro Ser Asp Phe Phe Pro Ser Val
 44 1 5 10 15
 45 Phe Leu Leu Ser Leu Gly
 46 20
 48 <210> SEQ ID NO: 2
 49 <211> LENGTH: 22
 50 <212> TYPE: PRT
 51 <213> ORGANISM: Artificial Sequence
 53 <220> FEATURE:
 54 <223> OTHER INFORMATION: Oligonucleotide for minigene pMIn1 with epitope
 55 identity core 18
 57 <400> SEQUENCE: 2
 58 Thr Leu Lys Ala Ala Ala Phe Leu Pro Ser Asp Phe Phe Pro Ser Val
 59 1 5 10 15
 60 Lys Leu Thr Pro Leu Cys
 61 20
 63 <210> SEQ ID NO: 3
 64 <211> LENGTH: 21
 65 <212> TYPE: PRT

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66 <213> ORGANISM: Artificial Sequence
68 <220> FEATURE:
69 <223> OTHER INFORMATION: Oligonucleotide for minigene HCV1 with epitope
70     identity core 132
72 <400> SEQUENCE: 3
73 Ile Leu Gly Gly Trp Val Asp Leu Met Gly Tyr Ile Pro Leu Val Tyr
74 1           5           10           15
75 Leu Val Ala Tyr Gln
76           20
78 <210> SEQ ID NO: 4
79 <211> LENGTH: 20
80 <212> TYPE: PRT
81 <213> ORGANISM: Artificial Sequence
83 <220> FEATURE:
84 <223> OTHER INFORMATION: Oligonucleotide for minigene HCV2 with epitope
85     identity core 132
87 <400> SEQUENCE: 4
88 Val Pro Gly Ser Arg Gly Asp Leu Met Gly Tyr Ile Pro Leu Val Ala
89 1           5           10           15
90 Lys Phe Val Ala
91           20
93 <210> SEQ ID NO: 5
94 <211> LENGTH: 9
95 <212> TYPE: PRT
96 <213> ORGANISM: Artificial Sequence
98 <220> FEATURE:
99 <223> OTHER INFORMATION: Oligopeptide
101 <400> SEQUENCE: 5
102 Val Leu Ala Glu Ala Met Ser Gln Val
103 1           5
105 <210> SEQ ID NO: 6
106 <211> LENGTH: 9
107 <212> TYPE: PRT
108 <213> ORGANISM: Artificial Sequence
110 <220> FEATURE:
111 <223> OTHER INFORMATION: Oligopeptide
113 <400> SEQUENCE: 6
114 Ile Leu Lys Glu Pro Val His Gly Val
115 1           5
117 <210> SEQ ID NO: 7
118 <211> LENGTH: 8
119 <212> TYPE: PRT
120 <213> ORGANISM: Artificial Sequence
122 <220> FEATURE:
123 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
124     Kb)
126 <221> NAME/KEY: VARIANT
127 <222> LOCATION: (1)...(8)
128 <223> OTHER INFORMATION: Xaa = Any Amino Acid

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130 <400> SEQUENCE: 7
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132 1 5
134 <210> SEQ ID NO: 8
135 <211> LENGTH: 8
136 <212> TYPE: PRT
137 <213> ORGANISM: Artificial Sequence
139 <220> FEATURE:
140 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
141 Kb)
143 <221> NAME/KEY: VARIANT
144 <222> LOCATION: (1)...(8)
145 <223> OTHER INFORMATION: Xaa = Any Amino Acid
147 <400> SEQUENCE: 8
W--> 148 Xaa Xaa Xaa Xaa Phe Xaa Xaa Ile
149 1 5
151 <210> SEQ ID NO: 9
152 <211> LENGTH: 8
153 <212> TYPE: PRT
154 <213> ORGANISM: Artificial Sequence
156 <220> FEATURE:
157 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
158 Kb)
160 <221> NAME/KEY: VARIANT
161 <222> LOCATION: (1)...(8)
162 <223> OTHER INFORMATION: Xaa = Any Amino Acid
164 <400> SEQUENCE: 9
W--> 165 Xaa Xaa Xaa Xaa Phe Xaa Xaa Met
166 1 5
168 <210> SEQ ID NO: 10
169 <211> LENGTH: 8
170 <212> TYPE: PRT
171 <213> ORGANISM: Artificial Sequence
173 <220> FEATURE:
174 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
175 Kb)
177 <221> NAME/KEY: VARIANT
178 <222> LOCATION: (1)...(8)
179 <223> OTHER INFORMATION: Xaa = Any Amino Acid
181 <400> SEQUENCE: 10
W--> 182 Xaa Xaa Xaa Xaa Phe Xaa Xaa Val
183 1 5
185 <210> SEQ ID NO: 11
186 <211> LENGTH: 8
187 <212> TYPE: PRT
188 <213> ORGANISM: Artificial Sequence
190 <220> FEATURE:
191 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
192 Kb)

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```

194 <221> NAME/KEY: VARIANT
195 <222> LOCATION: (1)...(8)
196 <223> OTHER INFORMATION: Xaa = Any Amino Acid
198 <400> SEQUENCE: 11
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200 1 5
202 <210> SEQ ID NO: 12
203 <211> LENGTH: 8
204 <212> TYPE: PRT
205 <213> ORGANISM: Artificial Sequence
207 <220> FEATURE:
208 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
209 Kb)
211 <221> NAME/KEY: VARIANT
212 <222> LOCATION: (1)...(8)
213 <223> OTHER INFORMATION: Xaa = Any Amino Acid
215 <400> SEQUENCE: 12
W--> 216 Xaa Xaa Xaa Xaa Tyr Xaa Xaa Ile
217 1 5
219 <210> SEQ ID NO: 13
220 <211> LENGTH: 8
221 <212> TYPE: PRT
222 <213> ORGANISM: Artificial Sequence
224 <220> FEATURE:
225 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
226 Kb)
228 <221> NAME/KEY: VARIANT
229 <222> LOCATION: (1)...(8)
230 <223> OTHER INFORMATION: Xaa = Any Amino Acid
232 <400> SEQUENCE: 13
W--> 233 Xaa Xaa Xaa Xaa Tyr Xaa Xaa Met
234 1 5
236 <210> SEQ ID NO: 14
237 <211> LENGTH: 8
238 <212> TYPE: PRT
239 <213> ORGANISM: Artificial Sequence
241 <220> FEATURE:
242 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
243 Kb)
245 <221> NAME/KEY: VARIANT
246 <222> LOCATION: (1)...(8)
247 <223> OTHER INFORMATION: Xaa = Any Amino Acid
249 <400> SEQUENCE: 14
W--> 250 Xaa Xaa Xaa Xaa Tyr Xaa Xaa Val
251 1 5
253 <210> SEQ ID NO: 15
254 <211> LENGTH: 9
255 <212> TYPE: PRT
256 <213> ORGANISM: Artificial Sequence

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```

258 <220> FEATURE:
259 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
260      Kb)
262 <221> NAME/KEY: VARIANT
263 <222> LOCATION: (1)...(9)
264 <223> OTHER INFORMATION: Xaa = Any Amino Acid
266 <400> SEQUENCE: 15
W--> 267 Xaa Xaa Xaa Xaa Phe Xaa Xaa Xaa Leu
      268 1      5
270 <210> SEQ ID NO: 16
271 <211> LENGTH: 9
272 <212> TYPE: PRT
273 <213> ORGANISM: Artificial Sequence
275 <220> FEATURE:
276 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
277      Kb)
279 <221> NAME/KEY: VARIANT
280 <222> LOCATION: (1)...(9)
281 <223> OTHER INFORMATION: Xaa = Any Amino Acid
283 <400> SEQUENCE: 16
W--> 284 Xaa Xaa Xaa Xaa Phe Xaa Xaa Xaa Ile
      285 1      5
287 <210> SEQ ID NO: 17
288 <211> LENGTH: 9
289 <212> TYPE: PRT
290 <213> ORGANISM: Artificial Sequence
292 <220> FEATURE:
293 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
294      Kb)
296 <221> NAME/KEY: VARIANT
297 <222> LOCATION: (1)...(9)
298 <223> OTHER INFORMATION: Xaa = Any Amino Acid
300 <400> SEQUENCE: 17
W--> 301 Xaa Xaa Xaa Xaa Phe Xaa Xaa Xaa Met
      302 1      5
304 <210> SEQ ID NO: 18
305 <211> LENGTH: 9
306 <212> TYPE: PRT
307 <213> ORGANISM: Artificial Sequence
309 <220> FEATURE:
310 <223> OTHER INFORMATION: Motif utilized for junctional minimization (murine
311      Kb)
313 <221> NAME/KEY: VARIANT
314 <222> LOCATION: (1)...(9)
315 <223> OTHER INFORMATION: Xaa = Any Amino Acid
317 <400> SEQUENCE: 18
W--> 318 Xaa Xaa Xaa Xaa Phe Xaa Xaa Xaa Val
      319 1      5
321 <210> SEQ ID NO: 19

```

Use of n and/or Xaa has been detected in the Sequence Listing.
 Review the Sequence Listing to insure a corresponding
 explanation is presented in the <220> to <223> fields of
 each sequence using n or Xaa.

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/894,018

DATE: 12/20/2001

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Input Set : D:\39963-20033.txt

Output Set: N:\CRF3\12202001\I894018.raw

L:131 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:148 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:165 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:182 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:199 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:216 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:233 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:250 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:267 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:284 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:301 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:318 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L:335 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:352 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:369 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:386 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22
L:400 M:283 W: Missing Blank Line separator, <400> field identifier
L:401 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:417 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24
L:433 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:449 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26
L:456 M:283 W: Missing Blank Line separator, <220> field identifier
L:464 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:480 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28
L:496 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:512 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:529 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:546 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32
L:563 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33
L:580 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34
L:597 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35
L:614 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36
L:631 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37
L:648 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38
L:665 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39
L:682 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40
L:699 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41
L:716 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42
L:733 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43
L:751 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44
L:768 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45
L:785 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46
L:802 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47
L:819 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48
L:836 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49
L:853 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50
L:870 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:887 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52

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L:904 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:53
L:921 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:54
L:938 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:55
L:955 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:56
L:970 M:283 W: Missing Blank Line separator, <400> field identifier